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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,494	03/09/2004	Michael A. Rothman	42P18588	3045

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EXAMINER
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MEHRMANESH, ELMIRA

ART UNIT	PAPER NUMBER
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2113

MAIL DATE	DELIVERY MODE
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06/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/796,494

Applicant(s)

ROTHMAN ET AL.

Examiner

Elmira Mehrmanesh

Art Unit

2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### Final Rejection

This action is in response to an amendment filed on February 20, 2007 for the application of Rothman et al., for a "System and method to implement a rollback mechanism for a data storage unit" filed March 9, 2004.

Claims 1-7, and 9-29 are pending in the application.

Claims 1-7, and 9-29 are rejected under 35 USC § 102.

Claims 1, 7, 9, 15, 19, 20, and 25 have been amended.

Claims 8, and 30-33 have been cancelled.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, and 9-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Lim et al. (U.S. Patent No. 6,795,966).

As per claim 1, Lim discloses a method, comprising: loading a virtual machine monitor into a system memory; using the virtual machine monitor as a proxy agent for firmware and an operating system ("OS") runtime and installation to a data storage unit

("DSU") coupled to the system memory, wherein the DSU and the system memory are included on a same hardware platform (col. 15, lines 30-43) and (Fig. 2)

using the virtual machine monitor to intercept a request to write new data to a location on the DSU (col. 17, lines 56-62)

using the virtual machine monitor to save a copy of old data currently residing at the location on the DSU to enable restoration of the old data to the location on the DSU (col. 19, lines 50-62)

and using the virtual machine monitor to write the new data to the location on the DSU (col. 23, line 67 through col. 24, lines 1-18).

As per claim 2, Lim discloses restoring the old data to the location using the saved copy of the old data to rollback the DSU to a previous state (col. 18, lines 33-42).

As per claim 3, Lim discloses generating a recovery screen asking a user whether to restore the previous state in response to encountering a system error (col. 18, lines 26-32) and (col. 26, lines 57-68).

As per claim 4, Lim discloses saving the copy of the old data further comprises saving the copy of the old data with a time marker to enable rollback of the DSU to a known good state (col. 11, lines 50-60).

As per claim 5, Lim discloses saving multiple versions of the old data correlated with time markers to enable rollback of the DSU to one of multiple previous states (col. 19, lines 23-36).

As per claim 6, Lim discloses pruning versions of the old data having an expired time marker (col. 25, lines 65-67 through col. 26, lines 1-6).

As per claim 7, Lim discloses saving the copy of the old data comprises saving the copy to a reserved area of the DSU hidden from an operating system ("OS") (col. 13, lines 43-50).

As per claim 9, Lim discloses a method, comprising: loading a virtual machine monitor into a system memory (Fig. 2); using the virtual machine monitor as a proxy agent for firmware and an operating system ("OS") runtime and installation to a data storage unit ("DSU") coupled to the system memory, wherein the DSU and the system memory are included on a same hardware platform (col. 15, lines 30-43) and (Fig. 2)

using the virtual machine monitor to intercept a request to write new data to a first location on the DSU a data storage unit ("DSU") (col. 17, lines 56-62)

using the virtual machine monitor to save the new data to a second location different from the first location (col. 23, line 67 through col. 24, lines 1-18)

and leaving old data currently stored at the first location to enable rollback of the DSU to a previous state (col. 19, lines 50-62).

As per claim 10, Lim discloses intercepting a request to read the first location of the DSU; determining whether the new data corresponding to the first location is currently saved at the second location (col. 24, lines 1-50) and diverting the request to read the first location to the second location (col. 11, lines 14-37).

As per claim 11, Lim discloses saving the new data to the second location further comprises saving an address of the first location along with the new data at the second location (col. 24, lines 1-4).

As per claim 12, Lim discloses the second location is located within a reserved area of the DSU hidden from an operating system loaded from a partition of the DSU (col. 13, lines 43-50).

As per claim 13, Lim discloses determining whether the new data corresponding to the first location is currently saved at the second location comprises searching the reserved area for a match between a read address of the request to read the first location and the address (col. 24, lines 1-4) of the first location saved along with the new data at the second location (col. 24, lines 1-50).

As per claim 14, Lim discloses deleting the new data written to the second location (col. 25, lines 65-67 through col. 26, lines 1-6) and directing the request to read the first location to the first location (col. 24, lines 1-50).

As per claim 15, Lim discloses a machine-accessible medium that provides instructions that, if executed by a machine (Fig. 2, element 110), will cause the machine to perform operations comprising:

loading a virtual machine monitor into a system memory (Fig. 2) included in the machine; using the virtual machine monitor as a proxy agent for firmware and an operating system runtime and installation to a data storage unit ("DSU") coupled to the system memory (col. 15, lines 30-43) and (Fig. 2)

using the virtual machine monitor to intercept a request to write new data to a location on the DSU (col. 17, lines 56-62)

using the virtual machine monitor to save a copy of old data currently residing at the location on the DSU to enable restoration of the old data to the location on the DSU (col. 19, lines 50-62)

and using the virtual machine monitor to write the new data to the location on the DSU (col. 23, line 67 through col. 24, lines 1-18).

As per claim 16, Lim discloses restoring the old data to the location using the saved copy of the old data to rollback the DSU to a previous state (col. 19, lines 50-62).

As per claim 17, Lim discloses saving the copy of the old data further comprises saving the copy of the old data with a time stamp to enable rollback of the DSU to a known good state (col. 11, lines 50-60).

As per claim 18, Lim discloses saving the copy of the old data further comprises saving the copy of the old data with an address of the location to enable restoring the old data to the location (col. 23, line 67 through col. 24, lines 1-50).

As per claim 19, Lim discloses further providing instructions that, if executed by the machine, will cause the machine to perform further operations, comprising:

executing the operating system ("OS") within a virtual machine; and proxying access to the DSU with a virtual machine monitor ("VMM") (col. 15, lines 30-43) and (Fig. 2)

wherein the VMM (Fig. 2, element 250) intercepts the request to write the new data (col. 17, lines 56-62) and saves the copy of the old data (col. 19, lines 50-62) to a reserved area hidden from the OS (col. 13, lines 43-50).

As per claim 20, Lim discloses a machine-accessible medium that provides instructions that, if executed by a machine (Fig. 2, element 110), will cause the machine to perform operations (Fig. 2) comprising:

loading a virtual machine monitor into a system memory (Fig. 2); using the virtual machine monitor as a proxy agent for firmware and an operating system runtime and installation to a data storage unit ("DSU") coupled to the system memory, wherein the DSU and the system memory are included on a same hardware platform (col. 15, lines 30-43) and (Fig. 2)



using the virtual machine monitor to intercept intercepting requests to write new data to write locations within a first portion of the DSU (col. 17, lines 56-62)

using the virtual machine monitor to save the new data to a reserved area not including the first portion (col. 13, lines 43-50)

and leaving old data currently stored at the write locations to enable rollback of the DSU to a previous state (col. 19, lines 50-62) and (col. 23, line 67 through col. 24, lines 1-18).

As per claim 21, Lim discloses intercepting a request to read a read location within the first portion (col. 17, lines 56-62)

determining whether any of the new data saved within the reserved portion corresponds to the read location and providing a corresponding portion of the new data in response to the request to read the read location, if some of the new data saved within the reserved area is determined to correspond to the read location (col. 23, line 67 through col. 24, lines 1-50).

As per claim 22, Lim discloses providing data saved at the read location within the first portion in response to the request to read the read location, if none of the new data saved within the reserved area is determined to correspond to the read location (col. 23, line 67 through col. 24, lines 1-50).

As per claim 23, Lim discloses saving the new data to the reserved area further comprises saving the new data to the reserved area along with addresses of the corresponding write locations (col. 23, line 67 through col. 24, lines 1-4) and wherein determining whether any of the new data saved within the reserved portion corresponds to the read location comprises comparing the addresses saved within the reserved area to a read address of the read location (col. 23, line 67 through col. 24, lines 1-50).

As per claim 24, Lim discloses providing instructions that, if executed by the machine, will cause the machine to perform further operations, comprising deleting the new data saved to the reserved area (col. 25, lines 65-67 through col. 26, lines 1-6) to rollback the DSU to a known good state (col. 23, line 67 through col. 24, lines 1-50).

As per claim 25, Lim discloses a system, comprising:

a processor to execute instructions (Fig. 2, element 110)

a hard disk drive ("HDD") (col. 9, lines 40-46) to save old data and new data (col. 19, lines 50-62) and non-volatile memory accessible by the processor and having the instructions stored thereon (Fig. 2, element 141) which if executed by the processor, will cause the processor to perform operations comprising:

loading a virtual machine monitor into a system memory coupled to the HDD and located on a same hardware platform as the HDD; using the virtual machine monitor as a proxy agent for firmware and an operating system runtime and installation to the HDD (col. 15, lines 30-43) and (Fig. 2)

using the virtual machine to intercept a request to write new data to a write location on the HDD (col. 17, lines 56-62)

using the virtual machine to save a copy of old data currently residing at the write location on the HDD to enable restoration of the old data to the write location on the HDD (col. 19, lines 50-62)

and writing the new data to the write location on the HDD (col. 23, line 67 through col. 24, lines 1-50).

As per claim 26, Lim discloses restoring the old data to the write location using the saved copy of the old data to rollback the HDD to a previous state (col. 23, line 67 through col. 24, lines 1-50).

As per claim 27, Lim discloses saving the copy of the old data currently residing at the write location comprises saving the copy of the old data with a time marker (col. 11, lines 50-60) and an address (col. 23, line 67 through col. 24, lines 1-4) of the write location to enable rollback of the HDD to a known good state (col. 23, line 67 through col. 24, lines 1-50).

As per claim 28, Lim discloses saving the copy of the old data currently residing at the write location further comprises saving the copy to a reserved area of the HDD hidden from an operating system saved on the HDD (col. 13, lines 43-50).

As per claim 29, Lim discloses the HDD (col. 9, lines 40-46) comprises the non-volatile memory (Fig. 2, element 141).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 9, 15, and 20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***


**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elmira Mehrmanesh whose telephone number is (571) 272-5531. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W. Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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